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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/577,445 | 05/24/2000 | Kenro Ohsawa | OOCL-29 (3TS-00S0338) | 4723 |

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| EXAMINER | |
|---|---|
| YODER III, CHRISS S | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2612 | 4 |

DATE MAILED: 02/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/577,445 | OHSAWA, KENRO | |
| | Examiner | Art Unit | |
| | Chriss S. Yoder, III | 2612 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *24 May 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 May 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 4 recites the limitation "said first image sensing means and said second image sensing means" in lines 10-11. There is insufficient antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3 and 5-6 is rejected under 35 U.S.C. 102(e) as being anticipated by Osawa et al (US Patent # 6,549,653).

3. In regard to claim 1, note Osawa discloses the use of a color reproduction system comprising a tristimulus value calculation means that calculates the tristimulus values corresponding to a spectral reflectance of an object (figure 2: 7 and 8; 7 calculates the spectral reflectance of the object, and 8 calculates the tristimulus value based on this spectral reflectance), calculates the tristimulus value using spectral reflectance data of a color chip formed from a plurality of color chips (figure 2: 7 and 8; 7

calculates the spectral reflectance of the chip, and 8 calculates the tristimulus value based on this spectral reflectance) , color chip sensing data obtained by sensing the color chip with an input device (figure 1: 1 and 2), spectral sensitivity data of the input device (column 2, lines 49-51), and color matching function data (figure 2: 8), a means for calculating an output color image signal based on the calculated tristimulus value (column 11, lines 62-67), and a means for outputting a color image based on the output image signal (column 11, lines 65-67; a CRT monitor).

4. In regard to claim 2, note Osawa discloses that the tristimulus value calculation means multiplies the color chip sensing data by a matrix obtained from a relationship between a product of spectral reflectance of the object and color matching functions (figure 2: 13, 15, and 16; 13 outputs the spectral reflectance and 16 multiplies this with the color matching functions stored in 15) and the product of the spectral reflectance data of the color chip and the spectral sensitivity of the input device (and figure 2: 11 outputs the spectral reflectance of the chip, and 12 stores the sensitivity; column 2, lines 49-51), thereby calculating the tristimulus value (figure 2: 16 outputs the tristimulus value).

5. In regard to claim 3, note Osawa discloses that the tristimulus value calculation means obtains the tristimulus values as a linear sum of basis function (column 23, lines 8-11) tristimulus values by multiplying the color chip sensing data by a matrix obtained from a relationship between a product of a plurality of basis functions of the spectral reflectance of the object and color matching functions (figure 2: 13, 15, 16, and 29; 13 outputs the plurality of basis functions of the spectral reflectance from 29, and 16

multiplies these with the color matching functions stored in 15) and the product of the spectral reflectance data of the color chip and the spectral sensitivity of the input device (and figure 2: 11 outputs the spectral reflectance of the chip, and 12 stores the sensitivity; column 2, lines 49-51), thereby calculating the tristimulus value (figure 2: 16 outputs the tristimulus value).

6. In regard to claim 5, note Osawa discloses the use of a color chip with a plurality of unit color chips having independent spectral reflectances and arrayed in a matrix (column 10, line 62– column 11, line 3; and figure 1: 2 is arrayed in a matrix).

7. In regard to claim 6, note Osawa discloses the use of a color monitor for outputting the color image (column 11, lines 62-67; and figure 2: 6 is a CRT monitor), and the means for outputting the image calculates the output color image on the basis of characteristics of the monitor (column 11, lines 62-67; and figure 2: 17 and 18).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 7 –14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell (US Patent # 5,793,884) in view of Vogel (US Patent # 5,668,596).

9. In regard to claim 7, note Farrell discloses the use of a first and second sensing means (figure 8: 10 and 11), means for calculating the spectral reflectance of an object based on the spectral sensitivity of the camera (column 3, lines 60-61), the spectrum

data of the sensing illumination light (column 3, lines 57-64), statistic data of the spectral reflectance of the object (column 3, lines 57-60), and outputting the spectral reflectance image data (column 4, lines 26-28; and figure 2:160; the spectral reflectance is output in step 160). Therefore, it can be seen that the Farrell device fails to sense a color chip under observation light, means for calculating tristimulus values of object under observation light on basis of output spectral reflectance image data, color chip image data sensed from image sensing means, spectral sensitivity data of the image sensing means, color chip spectral reflectance data representing spectral reflectance distribution of the color chip, and color matching function, a means for calculating the output color image signal based on the calculated tristimulus values, and a means for outputting a color image signal. Vogel discloses the use of a color chip under observation light (figure 7: 10, 72, and 74), means for calculating tristimulus values of object under observation light on basis of output spectral reflectance image data (combining the Farrell and Vogel devices, the output from the Farrell device is the spectral reflectance, which is input into the Vogel device), color chip image data sensed from image sensing means (column 7, lines 35-38; and figure 7: 10, 72, and 74), spectral sensitivity data of the image sensing means (column 5, lines 15-21; and column 5, lines 35-42), color chip spectral reflectance data representing spectral reflectance distribution of the color chip (column 7, lines 35-41), and color matching function (column 6, lines 46-55; CIE XYZ format), a means for calculating the output color image signal based on the calculated tristimulus values (column 7, lines 60-66; the tristimulus values, XYZ, are used to transform the signal), and a means for outputting a color image signal (column 8, lines

17-20; the image is output to a CRT; and figure 3: 17). Vogel teaches that the use of a color chip and a camera to sense the characteristics of the chip and lighting and to compensate for color differences in within different cameras that may be used in order to correct the image is preferred to more accurately reproduce the image exactly as it is captured. Therefore, it would have been obvious to one of ordinary skill in the art to modify the Farrell device to include the use of a color chip and a camera to sense the characteristics of the chip and lighting and to compensate for color differences in within different cameras that may be used in order to correct the image and to more accurately reproduce the image exactly as it is captured.

10. In regard to claim 8, note Farrell discloses the use of two sensing devices (figure 1: 12,16; 16 is a camera). Combining with the Vogel device, item 12 is replaced with a camera (figure 3: 10).

11. In regard to claim 9, note Vogel discloses the use of a plurality of colors in the color chip (column 7, lines 36-39), each having independent spectral reflectances (column 7, lines 36-39), and arrayed in a matrix (figure 7: 72)

12. In regard to claim 10, note Vogel discloses the use of a monitor for outputting the color images (figure 3: 17), and the means for outputting the image calculates the output image on the basis of characteristics of the monitor (column 6, lines 22-31).

13. In regard to claim 11, note Farrell discloses the use of a first and second sensing means (figure 8: 10 and 11), means for outputting expansion coefficient data (column 4, lines 26-28: S is the expansion coefficient data of spectral reflectances; and figure 2: the output of step 160 is the expansion coefficient), based on the spectral sensitivity of the

camera (column 3, lines 60-61), the spectrum data of the sensing illumination light (column 3, lines 57-64), statistic data of the spectral reflectance of the object (column 3, lines 57-60). Therefore, it can be seen that the Farrell device fails to sense a color chip under observation light, means for calculating tristimulus values of object under observation light on basis of output spectral reflectance image data, color chip image data sensed from image sensing means, spectral sensitivity data of the image sensing means, color chip spectral reflectance data representing spectral reflectance distribution of the color chip, and color matching function, a means for calculating the output color image signal based on the calculated tristimulus values, and a means for outputting a color image signal. Vogel discloses the use of a color chip under observation light (figure 7: 10, 72, and 74), means for calculating tristimulus values of object under observation light on basis of output spectral reflectance image data (combining the Farrell and Vogel devices, the output from the Farrell device is the spectral reflectance, which is input into the Vogel device), color chip image data sensed from image sensing means (column 7, lines 35-38; and figure 7: 10, 72, and 74), spectral sensitivity data of the image sensing means (column 5, lines 15-21; and column 5, lines 35-42), color chip spectral reflectance data representing spectral reflectance distribution of the color chip (column 7, lines 35-41), and color matching function (column 6, lines 46-55; CIE XYZ format), a means for calculating the output color image signal based on the calculated tristimulus values (column 7, lines 60-66; the tristimulus values, XYZ, are used to transform the signal), and a means for outputting a color image signal (column 8, lines 17-20; the image is output to a CRT; and figure 3: 17). Vogel teaches that the use of a

color chip and a camera to sense the characteristics of the chip and lighting and to compensate for color differences in within different cameras that may be used in order to correct the image is preferred to more accurately reproduce the image exactly as it is captured. Therefore, it would have been obvious to one of ordinary skill in the art to modify the Farrell device to include the use of a color chip and a camera to sense the characteristics of the chip and lighting and to compensate for color differences in within different cameras that may be used in order to correct the image and more accurately reproduce the image exactly as it is captured.

14. In regard to claim 12, note Farrell discloses the use of two sensing devices (figure 1: 12,16; 16 is a camera). Combining with the Vogel device, item 12 is replaced with a camera (figure 3: 10).

15. In regard to claim 13, note Vogel discloses the use of a plurality of colors in the color chip (column 7, lines 36-39), each having independent spectral reflectances (column 7, lines 36-39), and arrayed in a matrix (figure 7: 72)

16. In regard to claim 14, note Vogel discloses the use of a monitor for outputting the color images (figure 3: 17), and the means for outputting the image calculates the output image on the basis of characteristics of the monitor (column 6, lines 22-31).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US005363318A: note the use of a color chart for image color correction and calibration.

US006414756B1: note the use of tristimulus values to correct for device color differences.

US006453066B1: note the use of tristimulus values to correct for device color differences.

US004991007: note the use of a color correction chart for image color correction and calibration.

US006654493B1: note the comparison of an input image with stored colorimetric properties in order to correct and calibrate image color.

US005311293A: note the use of color correction chart for image color correction and calibration.

US006466334B1: note the storage of input and output device information to correct and calibrate image color.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chriss S. Yoder, III whose telephone number is (703) 305-0344. The examiner can normally be reached on M-F: 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber, can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-HELP.

CSY
February 5, 2004

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